

**REMARKS**

***Information Disclosure Statement***

Apparently, the International Office (WIPO) did not forward to the USPTO copies of the references cited in the International Search Report, therefore, and it is requested by the Examiner, Applicant now encloses copies of those cited references which are not U.S. patent documents, and requests the Examiner to initial and return to Applicant the enclosed Form PTO/SB/08 A & B listing the seven (7) EP documents.

***Specification/Claim Objections***

Applicant respectfully requests the Examiner to reconsider and withdraw the objections to the specification and claims, in view of the above corrective amendments; however, Applicant does not understand the Examiner's objection to claim 11, as claim 11 (see the Preliminary Amendment filed with the application on September 27, 2004) already reads "according to claim 1".

The typographical error at specification page 5, line 2 has been corrected. The questioned term in the two formulas is a zero, i.e., the meaning is that, when I or J are negative, I\* or J\* are equal to zero. Applicant also adds to claim 1 the same two equations which were inadvertently admitted from claim 1 at the time of drafting thereof.

***Claim Rejections - 35 U.S.C. § 103***

Examiner Yang issues the following three statutory prior art rejections:

(1) Claims 1-8 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable (obvious) over Ichikawa (JP '542) based on the English translation thereof, in view of Jean '116; and

(2) Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable (obvious) over JP '542 in view of Jean '116 and further in view of Jiro '421; and

(3) Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable (obvious) over JP '542 in view of Jean '116 and further in view of Lars-Ake '491.

Applicant respectfully **traverses** each of these rejections.

Applicant has amended independent parent claim 1 and dependent 8 by reducing the upper limit of the silicon content to 0.15% which is useful for increasing the thermal conductivity, as explained in Applicant's specification at page 8.

With such limitation for Applicant's claimed silicon content, the chemical composition of JP '542 does not overlap that recited in the amended claims.

This is a very important difference between Applicant's steel and the steel of JP '542.

According to the Applicant's invention, silicon has to be less than 0.15% in order to have a very good thermal conductivity.

To the **contrary**, according to JP '542, the chemical composition is adjusted such that it is possible to have a silicon content higher than 0.25%, and the lower limit of silicon content is 0.25%.

In JP 8,165,542, the thermal conductivity, of the steel is not even considered.

Moreover, there are two other differences between Applicant's invention and JP '542.

First, according to the present invention, boron is necessary to increase the quenchability; boron is wanted, and the composition has to be such that the boron effect on quenchability is fully effective (see specification page 10, last paragraph). To the **contrary**, in JP '542 the boron content is strictly limited because it is considered as harmful (see paragraph 0021), and there is nothing about the effect of boron on quenchability.

Second, according to the present invention, the hardness is specified at all points of a steel block. To the **contrary**, in JP '542, a maximum hardness is specified "by the side of the base material of weld junction sections". Those who are skilled in the art know that, near a weld junction, the hardness is higher than at other points of the steel block.

Therefore, the limitation of claim 1, i.e., "the hardness at all points is between 430 HB and 530 HB", is **very different** from the corresponding limitation of JP '542, i.e., "BH value <460", BH being "a value of the hardness by the side of the base material of the weld junction" (see paragraph 0024).

It is clear that the difference between the present invention and JP '542 is not only a problem of thickness and of adjustment of a heat treatment. Therefore, Applicant does not see how it would be possible to combine JP '542 and Jean '116 in order to obtain the Applicant's claimed invention.

With further regard to Jean '116, Applicant notes that this reference is directed to a steel, having a high abrasion resistance as used in the mining industry, which is very different from the claimed steel for molds.

Therefore, the skilled person would not compare this steel of '116 with the steel of the present invention.

The same is true for Lars-Ake '491 that describes a steel having a hardness between 350 and 380 HB, which is very different from the hardness of the steel according to Applicant's claimed invention. This difference in hardness results from a difference in chemical composition. Therefore, the ordinarily skilled person would not use the teaching of US '491 for the invention defined in claim 11.

As for dependent claim 9 (9/8/7/1), claim 9 inherits the limitations of its parent and intermediate claims 1, 7 and 8. Applicant has already pointed out the deficiencies in the **primary** reference JP '542, and notes that Jiro '421 does not teach or even suggest these deficiencies (and the Examiner does not even assert that Jiro does so).

Therefore, since the JP '542/Jiro '421 combination does **not** teach, or even suggest, **all the limitations** of the dependent claim 9 (9/8/7/1), Applicant respectfully submits that this combination is **incapable of rendering obvious** the subject matter of claim 9, whereby Applicant respectfully requests the Examiner also to reconsider and withdraw the rejection (2).

In summary, then, Applicant respectfully requests Examiner Yang to reconsider and withdraw the objections to the specification and claims in view of the above corrective amendments. Applicant also respectfully requests the Examiner to reconsider and withdraw the three rejections under 35 U.S.C. § 103(a), and to find the application to be in condition for allowance with all of claims 1-11; however, if for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to **call**

AMENDMENT UNDER 35 U.S.C. § 1.111  
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**the undersigned attorney** to discuss any unresolved issues and to expedite the disposition of the application.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this application, and any required fee for such extension is to be charged to Deposit Account No. 19-4880. The Commissioner is also authorized to charge any additional fees under 37 C.F.R. § 1.16 and/or § 1.17 necessary to keep this application pending in the Patent and Trademark Office or credit any overpayment to said Deposit Account No. 19-4880.

Respectfully submitted,

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